



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,881	03/23/2004	Gregory Lee Brookshire	TI-36253 (1962-08800)	2680

23494 7590 12/14/2006

TEXAS INSTRUMENTS INCORPORATED  
P O BOX 655474, M/S 3999  
DALLAS, TX 75265

EXAMINER
----------

HUYNH, NAM TRUNG

ART UNIT	PAPER NUMBER
----------	--------------

2617

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,881	<b>Applicant(s)</b> BROOKSHIRE, GREGORY LEE	
	<b>Examiner</b> Nam Huynh	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Response to Amendment*

This office action is in response to amendment filed on 7/12/06. Of the original claims 1-21, claims 1, 5-7, and 21 have been amended.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US 2004/0174831) in view of Dent (US 6,314,504).

A. Regarding claims 1, 3, 4, and 7, Yi et al. discloses a method and apparatus for data transmission suitable for a high-performance wireless LAN. In the scope of the invention, a media access controller (MAC) (master/processor) performs data transmission with a baseband processor (BBP) (slave/LAN adapter) using a serial communication interface. The MAC includes a data path and a control signal path for

mutual transmission of data and control signals with the BBP (page 3, paragraph 37).

The control path is a transmission path that allows for the reading and writing of the contents of a register provided in the BBP and uses a serial peripheral interface (SPI) (page 3, paragraph 38). Yi et al. does not explicitly disclose that the slave device is configurable to operate in multiple modes including a direct memory addressing mode and an indirect memory addressing mode. Dent discloses multi-mode memory addressing using variable length (title). In the scope of the invention, new addressing modes are provided to a processor including direct addressing and indirect addressing (column 7, lines 14-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yi et al. to allow the MAC to configure the BBP to operate in a direct memory addressing mode or an indirect memory addressing mode, as taught by Dent, in order to reduce the number of bytes of data communicated, hence reducing power consumption.

B. Regarding claim 2, Yi et al. discloses a SPI chip selection signal (SPICS) (initialization command) that is activated to transmit the transmission rate data to the baseband processor (page 5, paragraph 69).

C. Regarding claim 5, Dent teaches the use of a SETLENGTH instruction that controls how the processor treats data and memory addresses during processing by establishing the accumulator length at any usable length (column 6, lines 21-25).

Because of this feature, it is further obvious that the RF subsystem can be configured in different modes of any usable length in the combination of Yi et al. and Dent.

Furthermore, it is inherent to one of ordinary skill in the art that commands associated

Art Unit: 2617

with an indirect memory addressing mode have a shorter length than commands associated with a direct memory addressing mode.

D. Regarding claim 6, in Yi et al., the control signal (RFCTRL) would switch the operating mode of the RF subsystem. Power conservation is taught by Dent.

E. Regarding claim 8, the limitations are rejected as applied to claims 1 and 5.

F. Regarding claim 9, Dent teaches the use of a R/W bit and an address bit (figure 6A). Yi et al. teaches the use of a transmission data length (TX Length) (data length field) of a frame to be transmitted (page 3, paragraph 38).

G. Regarding claim 10, Dent teaches the implementation of the indirect memory addressing mode for power conservation. Therefore it is further obvious to one of ordinary skill in the art that indirect memory would be used for power conservation in the combination of Dent and Yi et al. because of the reduced command length.

H. Regarding claim 19, the limitations are rejected as applied to claim 1.

Furthermore, Dent shows in figure 6, a 31 bits of direct address and 30 bits of indirect address.

4. Claims 11, 12, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US 2004/0174831) in view of Dent (US 6,314,504) as applied to claims 10 and 19 above, and further in view of Cromer et al. (US 2004/0002366).

A. Regarding claims 11 and 12, the combination of Yi et al. and Dent discloses the limitations set forth in claim 10, but does not explicitly disclose that the low power compatible mode is implemented when only the battery provides power to the slave

Art Unit: 2617

device or when there is a predetermined threshold amount of power in the battery.

Cromer et al. discloses a mobile unit in which the symbol rate and bits per symbol of a wireless LAN adapter is changed depending on what source of power is providing power to the mobile unit (page 3, paragraph 33, 34). There is a symbol rate for Aux Power (no battery), DC Power (battery), and a battery power threshold (figure 8).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Yi et al. and Dent, to include the capability to change the operating mode of the baseband processor when only the battery provides power or when it reaches a certain threshold, as taught by Cromer et al., in order to conserve battery power without adversely affecting the throughput of the mobile device.

B. Regarding claims 20 and 21, in the combination of Yi et al., Dent, and Cromer et al. the means for determining when to configure the device would be the type of power being used (power consumption parameter) will determine the symbol rate and bit rate (read/write command length) selected and used by the RF transceiver (page 3; paragraph 31).

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 13-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Cromer et al. (US 2004/0002366).

A. Regarding claims 13, 17, and 18, Cromer et al. discloses an apparatus, method, and program to optimize battery life in a wireless device (title). In the scope of the invention, a client device comprises a wireless LAN interface that includes a controller (figure 3, item 324) (master device) and a RF transceiver (figure 3, item 330) (slave device). The controller further comprises a symbol and bit rate generator that generates variable symbols based upon the power source on which the mobile device is running on (page 2, paragraph 30). The type of power being used (power consumption parameter) will determine the symbol rate and bit rate (read/write command length) selected and used by the RF transceiver (page 3, paragraph 31). As can be seen in figure 8, when the device receives aux power, the maximum symbol rate is used by the RF transceiver (non-reduced length) and when the device receives battery power and the battery level is below a threshold, then a lower symbol rate (reduced length) is used.

B. Regarding claims 14-15, Cromer et al. discloses that the symbol rates and bits are adjustable (page 3, paragraph 33). Therefore, it is inherent that the RF transceiver can be configured for 32 or 16 bits.

C. Regarding claim 16, the invention of Cromer et al. pertains to operation in a wireless LAN protocol.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam Huynh whose telephone number is 571-272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH  
12/4/06

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER